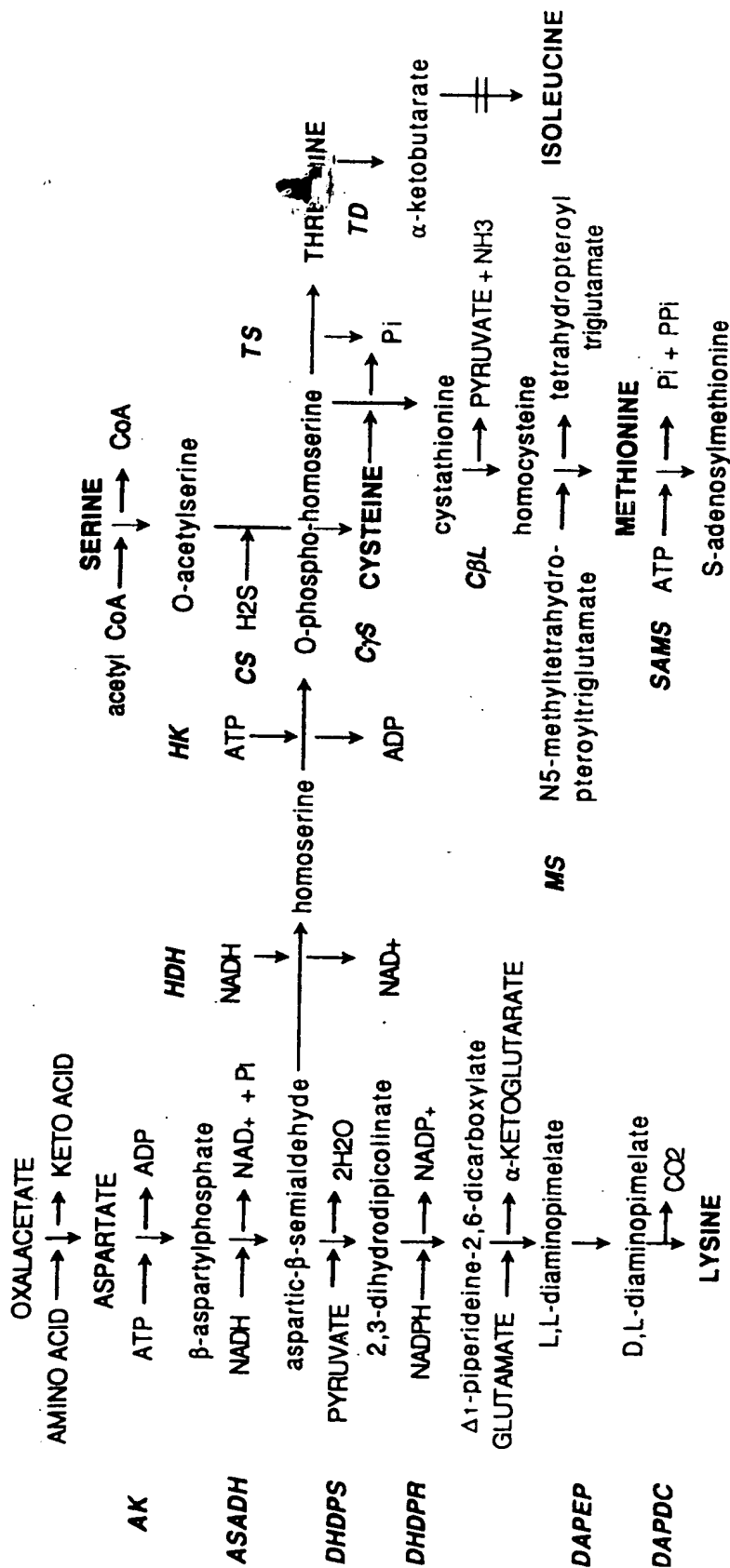


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FIG. 1



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## Figure 2A

SEQ	ID	NO:	7	MS	-----RHL-----	-----NVAIVGATGAVGETFLTV
SEQ	ID	NO:	52	MG	-----Y-----	-----RVAIVGATGEVGRFLKV
SEQ	ID	NO:	43		-----	-----
SEQ	ID	NO:	2		-----	-----
SEQ	ID	NO:	45	MQ	AAAAVHRPHLLGAYPGGGRARRPST--	--VRMALREDGPSVAIVGATGAVGQEFRLV
SEQ	ID	NO:	6	-MAS	SVLRHNHLFSG-PLPARPKPTSSSSSRIRMSLR	ENGPSIAVVGTGAVGQEFSLV
SEQ	ID	NO:	49	-MAS	SVLRHNHLFSG-PLPARPKPTSSSSSRIRMSLR	ENGPSIAVVGTGAVGQEFSLV
SEQ	ID	NO:	47	ARAS	SVLRHNHLFSG-PLPARPKPTSSSSSRIRMSLR	ENGPSIAVVGTGAVGQEFSLV
SEQ	ID	NO:	4		-----	-----
SEQ	ID	NO:	51	MQ	AAAA-VHRPHLLAASPLGGRARRPST--	--VRMALREDGPSVAIVGATGAVGQEFRLV

1

60

```

SEQ ID NO: 7      LEERNFPIKSLYPLASSRSVGKTVTFRDQQLDVLDA-EFDFSKVDLALFSAGGAVSKEY
SEQ ID NO: 52     LEERNFPVDELVLYASERSEKVLTFKGKEYTVKALNKENSFKGIDIALFSAGGSTSKEW
SEQ ID NO: 43     -----AVQDLAAPGAFDGV DIALFSAGGSVSRKY
SEQ ID NO: 2      -----
SEQ ID NO: 45     ISSRGFPYRSLRLLASERSAGKRLPFEGQEQYTVQDLAAPGAFDGV DIALFSAGGGVSRAH
SEQ ID NO: 6      LSDRDFPYRSIHMLASKRSAGRRITFED-----
SEQ ID NO: 49     LSDRDFPYRSIHMLASKRSAGRRITFEDRDYVVQELT-PESFDGV DIALFSAGGSIKHF
SEQ ID NO: 47     LSDRDFPYRSIHMLASKRSAGRRITFEDRDYVVQELT-PESFDGV DIALFSAGGSIKHF
SEQ ID NO: 4      -----
SEQ ID NO: 51     ITARDFPYRSLRLLASERSAGKRIDFEGRDYTEGRDYLAAFGAFDGV DIALFSAGGSI SRAH

```

Figure 2B

SEQ ID NO: 7	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
SEQ ID NO: 52	APKAVAAGCVVVDNTSCFRYEDDIPLVVP	SESSNRDYT---	KRGIIANPNCSTIQMV			
SEQ ID NO: 43	APKFAKDGVVVIDNSSAWRMDPDVPLV	PEVNPEDEVKDFK---	KKGIIANPNCSTIQMV			
SEQ ID NO: 2	GPAAVASGAVVVDNSSAFRMEPEVPLVI	PEVNPEAMANVRLG--	QGAIVANPNCSTIICL			
SEQ ID NO: 45	APAAVASGAVVVDNSSAFRMDPEVPLVI	PEVNPEAMAHVRLG--	KGAIVANPNCSTIICL			
SEQ ID NO: 6	GPIAVNRGTVVVDNSSAFRMDPEVPLVI	PEVNPEAMQNIKAGTGKALIANPNCSTIRCL				
SEQ ID NO: 47	GPIAVNRGTVVVDNSSAFRMDPEVPLVI	PEVNPEAMQNIKAGTGKALIANPNCSTIICL				
SEQ ID NO: 4	APAAVASGAVVVDNSSAFRMDPEVPLVI	PEVNPEAMADVRLG--	KGAIVANPNCSTIICL			

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SEQ ID NO: 7	VALKPIYDAVGISRINVTATYQSVSGTGKKAISELVAQVGDLLNGRP-ANVQVYPQQIAFN
SEQ ID NO: 52	VALKPIYDKAGIKRVVSTYQAVSGAGAKAIEDLNQTKAWCEGKEMPKAQKFPHQIAFN
SEQ ID NO: 43	MAATPLHRHAKVLRMVVSTYQAAASGAGAAAAMEELKLQQTQEVLEGKA-PTCNIFKQQYAFN
SEQ ID NO: 2	MAATPLHRHAKVLRMVVSTYQAAASGAGAAAAMEELKLQQTQEVLEGKA-PTCNIFKQQYAFN
SEQ ID NO: 45	MAATPLHRHAKVLRMVVSTYQAAASGAGAAAAMEELKLQQTQEVLEGKA-PTCNIFKQQYAFN
SEQ ID NO: 6	MAATPLHRHAKVLRMVVSTYQAAASGAGAAAAMEELKLQQTQEVLEGKA-PTCNIFKQQYAFN
SEQ ID NO: 49	MAATPLHRHAKVLRMVVSTYQAAASGAGAAAAMEELKLQQTQEVLEGKA-PTCNIFKQQYAFN
SEQ ID NO: 47	MAATPLHRHAKVLRMVVSTYQAAASGAGAAAAMEELKLQQTQEVLEGKA-PTCNIFKQQYAFN
SEQ ID NO: 4	MAATPLHRHAKVLRMVVSTYQAAASGAGAAAAMEELKLQQTQEVLEGKA-PTCNIFKQQYAFN
SEQ ID NO: 51	MAATPLHRHAKVLRMVVSTYQAAASGAGAAAAMEELKLQQTQEVLEGKA-PTCNIFKQQYAFN

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## Figure 2C

[illegible]

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Figure 2D

```
++ ++++++ *
++ ++++++ ** ***** *
SEQ ID NO: 7 VADNIRKGAATNAVQIAEILQREFLLKLSLPQ
SEQ ID NO: 52 VADNIRKGAATNAVQIAELLVKEGLI-----
SEQ ID NO: 43 CGDQIRKGAALNAVQIAEML-----LK-
SEQ ID NO: 2 CGDQIRKGAALNAVQIAEML-----LK-
SEQ ID NO: 45 CGDQIRKGAALNAVQIAEML-----LK-
SEQ ID NO: 6 -----
SEQ ID NO: 49 CGDQIRKGAALNAVQIAEML-----L-
SEQ ID NO: 47 CGDQIRKGAALNAVQIAEML-----L-
SEQ ID NO: 4 CGDQIRKGAALNAVQIAEML-----LK-
SEQ ID NO: 51 CGDQIRKGAALNAVQIAEML-----LK-
361 392
```

Figure 3A

SEQ ID NO:20	MD	-----TFSYRDAE-----	
SEQ ID NO:57	MGQTNSETQQA	RLYTQNSQKQLLR	SFLLLHLIFGYQSHKTLRMAAATQFLSQPSSLNPHQ
SEQ ID NO: 9		-----	
SEQ ID NO:11	M	-----AAANLLSRSL	-----PTPNTIRTSHPTPRSPAV-----
SEQ ID NO:13	L	-----H-----	-----
SEQ ID NO:15		-----	-----
SEQ ID NO:19		-----	-----
SEQ ID NO:54	C	-----NTHCLVGKIFH-----	-----QQHTAMAGSNILSHSPSLPKTYSHS-----
SEQ ID NO:17		-----	-----
SEQ ID NO:56		-----	-----

1 60

SEQ ID NO:20	+	+++	**	*+
SEQ ID NO:57	LKNQTSQRSR	SIPVLSKSTL	KPLKRLSV--KA	AVVSQNSSKTVTKFDHCFKKSSDGFLY
SEQ ID NO: 9		-----	-----	-----LF
SEQ ID NO:11		-----VSFPRRRARL	SVCASVSMASPP	PPQAAAGVPKHC
SEQ ID NO:13		-----	-----	-----FRRGADGYLY
SEQ ID NO:15		-----	-----	-----
SEQ ID NO:19		-----	-----	-----
SEQ ID NO:54	LNQNALSQKL	FFLPLKFKA	TTKPRALRAVL	SQNAVKTSVEDTKNAHFQHC
SEQ ID NO:17		-----	-----	-----FTKSEDGYLY
SEQ ID NO:56		-----	-----	-----

61 120

	+ **	+	+	+	++	++	+++	++++	*****	++	**	*	+	++	**	+++	****	*****	*	*
SEQ ID NO:20	AEGVALSRIAERFG-TPTYVYSRAHIEAQYRAYADALAGMPHLVCFAVKANSNLGVLNVLL																			
SEQ ID NO:57	CEGTKVEDIMESVERRPFYLYSKPQITRNLEAYKEALEGVSSVIGYAIKANNLKI LEHL																			
SEQ ID NO: 9	-----																			
SEQ ID NO:11	CEGVRVEDAMAAERSPFYLYSKLQILRNFAAYRDALQGLRSIVGYAVKANNNLPVLRVL																			
SEQ ID NO:13	-----																			
SEQ ID NO:15	-----																			
SEQ ID NO:19	-----RRPFYLYSKPQITRNVEAYKD ALEGLNSIIGYAIKANNLKI LXHL																			
SEQ ID NO:54	CEGLKVHDIMESVERRPFYLYSKPQITRNVEAYKD ALEGLNSIIGYAIKANNLKI LEHL																			
SEQ ID NO:17	-----																			
SEQ ID NO:56	-----																			

[illegible]

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### Figure 3C

	+++ +	*+ +	+***++**++++*+*****+	++++*+*	+++++	++	+
SEQ ID NO:20	RLQ RVA AELGVKAPVSLRVNPDVDAQTHPYISTGLKENKFGIAIDEA EAVYARAAEL - DH						
SEQ ID NO:57	NIVEASRISGKQNVNLLRINPDVDPQVHPYPVATGNKN SKFGIRNEKLQWFLDQVKAHPKE						
SEQ ID NO:9	NIVRAARATGKKVPVLLRINPDVDPQVHPYPVATGNKTSKFGIRNEKLQWFLDSIKSY PNE						
SEQ ID NO:11	NIVRAARATGKKVPVLLRINPDVDPQVHPYPVATGNKTSKFGIRNEKLQWFLNSIKSY SNE						
SEQ ID NO:13	NIVTAARVAGKKVPVLLRINPDVDPQVHPYPVATGNKTSKFGIRNEKLQWFLDSIKSY SND						
SEQ ID NO:15	-----VATGNKSKFGIRNEKLQCFLDA VKEHPNE						
SEQ ID NO:19	-----						
SEQ ID NO:54	NIVEAAKRAGKKVNLLRINPDVDPQVHPYPVATGNKN SKFGIRNEKLQCFLDA VKEHPNE						
SEQ ID NO:17	-----						
SEQ ID NO:56	-----						

2413

SEQ	ID NO: 20	++* + ** + ** + ** + ** + ** + ** + ** + ** + ** + ** + ** + ** + ** +	LEVIGVDCHIGSQLTQLEPFLDALERLLGLVDRLAGKGIGIRHLDLGGGLGVRYRDEQP
SEQ	ID NO: 57		LKLVGAHCHLGSTITKVDIFRDAAVLMIEYIDEIRRQGFVSYLNI GGGLGIDYHHAGAV
SEQ	ID NO: 9		IKLVGVHCHLGSTITKVDIFRDAAVLMVYVDEIRAQGFKLEYLNI GGGLGIDYHHTDAV
SEQ	ID NO: 11		IKLVGVHCHLGSTITKVDIFRDAAVLMVYVDEIRAQGFKLEYLNI GGGLGIDYHHTDAV
SEQ	ID NO: 13		ITLVGVHCHLGSTITKVDIFRDAAGLMVYVDEIRAQGFLEYLNI GGGLGIXYHHTDAV
SEQ	ID NO: 15		LKLVGAHCHLGSTITKVDIFRDAATIMINYIDQIRDQGFVVDYLNIGGGLGIDYHSGAI
SEQ	ID NO: 19		-----
SEQ	ID NO: 54		LKLVGAHCHLGSTITKVDIFRDAATIMINYIDQIRDQGFVVDYLNIGGGLGIDYHSGAI
SEQ	ID NO: 17		-----
SEQ	ID NO: 56		-----FELEYLNI GGGLGIDYHHTGAV

301

3



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Figure 3D

```

*+++      ++ + * *++*****++*++*++*++ *++*++ *++*
SEQ ID NO:20 LA---GDYIRAIRERLHGRDLTLVFEPGRSIVANAGVLLTRVEYLKTHEHKDFAIVDAAM
SEQ ID NO:57 LPTPMD-LINTVRELVLSDNLNLIIEPGRSLIANTCCFVNHVTVGKTNGTKNFIVIDGSM
SEQ ID NO: 9 LPTPMD-LINTVRELVLSDLTLLIIEPGRSLIANTCCFVNRTGVKSNGTKNFIVVDGSM
SEQ ID NO:11 LPTPMD-LINTVRELVLSDLTLLIIEPGRSLIANTCCFVNRTGVKSNGTKNFIVVDGSM
SEQ ID NO:13 LPTPMGPHQHCAEELVLSRDLTLLIIEPGRSLIANTCCFVNRTGVKSNGTKNFIVVDGSM
SEQ ID NO:15 LPTPRD-LIDTVRDLVISRGLNLIIEPGRSLIANTCCLVNRTGVKTNKSNFIVIDGSM
SEQ ID NO:19 -----
SEQ ID NO:54 LPTPRD-LIDTVRDLVISRGLNLIIEPGRSLIANTCCLVNRTGVKTNKSNFIVIDGSM
SEQ ID NO:17 -PTPMD-LINTVRELVLSDLTLLIIEPGRSLIANTCCFVNKVTGVKSNGTKNFIVVDGSM
SEQ ID NO:56 LPTPMD-LINTVRELVLSDLTLLIIEPGRSLIANTCCFVNKVTGVKSNGTKNFIVVDGSM
                                     420

*+++*++* *++*++*++*++*++*++*++*++*++*++*++*++*++*
SEQ ID NO:20 NDLIRPALYQAWMDVQAVRPRDAAPR--RYDLVGPI CETGDFLAKDRDLALAE-GDLLAV
SEQ ID NO:57 AELIRPSLYDAYQHIELVSPPPAEAEVTKFDVVGPVCEADFLGKDRELTPPPQGAGLVV
SEQ ID NO: 9 AELIRPSLYGAYQHIELVSPPTPGAEEATFDIVGPVCEADFLGKDRELTPDEGAGLVV
SEQ ID NO:11 AELIRPSLYGAYQHIELVSPPTPGAEEATFDIVGPVCEADFLGKDRELTPDEGAGLVV
SEQ ID NO:13 AELIRPSLYGAYQHIELVSPS-PDAEVATFDIVGPVCEADFLGKDRELTPDPKGAGLVV
SEQ ID NO:15 AELIRPSLYDAYQHIELVSPAPSAETETFDVVGPVCEADFLGKRELTPAKGTGLVV
SEQ ID NO:19 -----
SEQ ID NO:54 AELIRPSLYDAYQHIELVSPAPSAETETFDVVGPVCEADFLGKRELTPAKGTGLVV
SEQ ID NO:17 AELIRPSLYGAYQHI-----
SEQ ID NO:56 AELIRPSLYGAYQHIELVSPS-PGAEVATFDIVGPVCEADFLGKDRELTPDPKGAGLVV
                                     480
                                     421
```

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### Figure 3E

[illegible]

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Figure 4A

```

      *
SEQ ID NO: 60 MA-SLCFQSPSKPISYFQPKSNPPLFAKVSVFRCRASVQTLVAVEPEPVFVSVKTFAP
SEQ ID NO: 29 M-----REIMKVRVKA--P
SEQ ID NO: 22 -----
SEQ ID NO: 24 -----
SEQ ID NO: 59 -----
SEQ ID NO: 26 MATSTCFLCPSTA-----SLKGRARF-RIRI-RCSSSVSVNIRREPEPVTTLVKAFAP
SEQ ID NO: 28 -----
1
60

+++++* *++++* + +++++ + +++++ + *+ *+ *+ *+
SEQ ID NO: 60 ATVANLGPGFDFLG-CAVDGLGDHVTLRVDPSPVRAGEVSISEITG-TTTLSTNPLRNCA
SEQ ID NO: 29 CTSANLGVGFDVFGLC---LKEPYDVIEVEAIDDKIIEVDD---KNIPTDPDKNVA
SEQ ID NO: 22 -----
SEQ ID NO: 24 -----
SEQ ID NO: 59 -----H
SEQ ID NO: 26 ATVANLGPGFDFLG-CAVDGLGDIVSVKVDPPQVHPGEICISDISGHAPNKL SKNPLWNCA
SEQ ID NO: 28 -----
61

++ + + + + + + + + + + + + + + + + + + + + + + + + + +
SEQ ID NO: 60 GIAAIAATMKMLGIRSVGLSLDLHKGLPLGSLGSSAASAAAAA AVAVNEIFGRKLGSDQLV
SEQ ID NO: 29 GIVAKKMIDDFNI -GKGVKITIKGVKAGSGLGSSAASSAGTAYAINELF - KLNLDKLV
SEQ ID NO: 22 -----
SEQ ID NO: 24 -----VSIHLTKGLPLGSLGSSAASAAAAA KAVDALFGSL LHQDDLV
SEQ ID NO: 59 EVAAIAALRALDVKSHAVSIHLTKGLPLGSLGSSAASAAAAA KAVDALFGSL LHQDDLV
SEQ ID NO: 26 GIAAIEVMKMLSIRSVGLSLSEKGLPLGSLGSSAASAAAAA AVAVNELFGKKLSVEELV
SEQ ID NO: 28 -----
121
180
```

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Figure 4B

```

SEQ ID NO: 60      *+ + * * + * * * * * * * * * * * * * * * * * +
LAGLES--EAKVS-GYHADNIAPAIMGGFVLIRNYEPLDLKPLKFPSPDKDLFFVLVSPEF
SEQ ID NO: 29      LVDYASYGELASSGAKHADNVAPAFGGFTMTNYEPLV--LHIPIDFKLDILIAIPNI
SEQ ID NO: 22      -----DNIAPAILGGFVLVRSYDPFHLVPLSFPPALRLHFVLVTPDF
SEQ ID NO: 24      LAGLES--EKAVSGXXHADNIAPAILGGFVLVRSYDP--FHLI-----
SEQ ID NO: 59      LAGLES--EKAVSG-FHADNIAPAILGGFVLVRSYDPFHLIPLSSPPALRLHFVLVTPDF
SEQ ID NO: 26      LASLKS--EEKVSG-YHADNVAPSIMGGFVLIGSYSPLELMPKFPKAEKELYFVLVTPDF
SEQ ID NO: 28      ---LES--EKAVSG-FHADNIAPAILGGFVLVRSYDPFHLVPLSFPPALRLHFVLVTPDF
181
++++* +++* * * * * * * * * * * * * * * * * * * * * * * * * * * *
EAPTKMRAALPTEIPMVHHVWNSSQAAALVAALVLEGDAVMLGKALSSDKIVEPTRAPLI
SEQ ID NO: 60
SEQ ID NO: 29      SINTKEAREILPKAVGLKDLVNVGKACGMVYALYNKDKSLFGRYMSDKVIEPVRGKLI
SEQ ID NO: 22      EAPTSKMRAALPRQVDVQQHVRNSSQAAALVAALVQGDAGLIGSAMSSDGIVEPTRAPLI
SEQ ID NO: 24      -----
SEQ ID NO: 59      EAPTSKMRAALPKQVAVHQHVRNSSQAAALVAALVQGDATLIGSAMSSDGIVEPTRAPLI
SEQ ID NO: 26      EAPTKMRAALPTEIGMPHHVWNCSQAGALVASVLQGDVVLGKALSSDKIVEPTRAPLI
SEQ ID NO: 28      EAPTSKMRAALPRQVDVQQHVRNSSQAAAL-----
241
++++* +++* * * * * * * * * * * * * * * * * * * * * * * * * * * *
PGMEAVKKAALAEAGAFGCTISGAGPTAVAVIDSEKQGVIGEKMVEAFWKVGHLSVASV
SEQ ID NO: 60
SEQ ID NO: 29      PNYFKIKEE-VKDKVYGITISGSGPSIIA-----
SEQ ID NO: 22      PGMAAVKAAALQAGALGCTISGAGPTVAVIQGEERGEVARKMVDAFWSAGLKLKATATV
SEQ ID NO: 24      -----
SEQ ID NO: 59      PGMAAVKAAALAEAGALGCTISGAGPTAVAVIDGEEKGEEVGRRMVEAFANAGNLKATATV
SEQ ID NO: 26      PGMEAVKRAAIQAGAFGCTISGAGPTAVAVIDDEQTHGLIAKHMIDAFHLVGNLKSANV
SEQ ID NO: 28      -----
301
++++* +++* * * * * * * * * * * * * * * * * * * * * * * * * * * *
PGMEAVKKAALAEAGAFGCTISGAGPTAVAVIDSEKQGVIGEKMVEAFWKVGHLSVASV
SEQ ID NO: 60
SEQ ID NO: 29      PNYFKIKEE-VKDKVYGITISGSGPSIIA-----
SEQ ID NO: 22      PGMAAVKAAALQAGALGCTISGAGPTVAVIQGEERGEVARKMVDAFWSAGLKLKATATV
SEQ ID NO: 24      -----
SEQ ID NO: 59      PGMAAVKAAALAEAGALGCTISGAGPTAVAVIDGEEKGEEVGRRMVEAFANAGNLKATATV
SEQ ID NO: 26      PGMEAVKRAAIQAGAFGCTISGAGPTAVAVIDDEQTHGLIAKHMIDAFHLVGNLKSANV
SEQ ID NO: 28      -----
360
```

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Figure 4C

```
++ ++ ++
SEQ ID NO:60 KKLDKVGAR-----
SEQ ID NO:29 -----FPKEEFIDEVENILR---DYVE-----
SEQ ID NO:22 AQLDTLGARVIATS---SLN-----
SEQ ID NO:24 -----
SEQ ID NO:59 AQLDRVGARVISTS---TLE-----
SEQ ID NO:26 KQLDRLGARRIPNTFFSSLSLEACRFQEPDFFQLARNTLSADRS HVFEISDQSSILVWRSE
SEQ ID NO:28 -----
361
SEQ ID NO:60 -----LVNSVSR-----
SEQ ID NO:29 NTIRTEVGKGV---EVV-----
SEQ ID NO:22 -----
SEQ ID NO:24 -----
SEQ ID NO:59 -----
SEQ ID NO:26 QEKHTQAGSSVWVVEIIDELKTIRSVLWTLKHVLDFLCFVFIIFLSCYLSQSSKRSHFYF
SEQ ID NO:28 -----
421
SEQ ID NO:60 -----
SEQ ID NO:29 -----
SEQ ID NO:22 -----
SEQ ID NO:24 -----
SEQ ID NO:59 -----
SEQ ID NO:26 LVSLCLILAFEHVLF
SEQ ID NO:28 -----
481
496
```

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Figure 5A

```
SEQ ID NO:66 M--ASFINNPLTSLCNTKSERNNLFKISL-----YEAQSLGFSKINGSRKVAFPS
SEQ ID NO:32 M--AD-----AKST-----
SEQ ID NO:65 M--ASLVNNAYAAIRTSKLE-----LREVKNLANFR
SEQ ID NO:62 -----MASWSSPSAAANAASGARFGFPSPGGQRLAPCPSLVRGT
SEQ ID NO:64 ARGSNYGTTPLSNTSESEQRKMASWSSPVAA--AALQVHFGSSCFFSAR-SPRQTLLLPP
SEQ ID NO:31 M--AV-----ERSG-----
1
60

SEQ ID NO:66 VVCKAV-----SVPTKSS-----TEIEGLNIAEDVTQLIGNTPM
SEQ ID NO:32 -----IAKDVTELIGNTPM
SEQ ID NO:65 VGPPSSLS-----CNNFKKVSSSPIT---CKAVSLSPSTIEGLNIAEDVSQIGKTPM
SEQ ID NO:62 PAPTLLVRLHPDGRGHGLLAHTGPPSSR-CRAVA---AEVGGLNIANDVTQLIGNTPM
SEQ ID NO:64 LARNPTLTIQP--RPHPPFRNINSSSSWMMCHAVA---AEVEGLNIADDVTQLIGNTPM
SEQ ID NO:31 -----IAKDVTELIGNTPM
61
120

SEQ ID NO:66 VYLNTIAKGCVANIAAKLEIMEPCCSVKDRIGFSMIVDAEEKGLISPGKTVLVEPTSGNT
SEQ ID NO:32 VYLNRVVDGCVARVAAKLEMMEPCCSVKDRIGYSMISDAENKGLITPGESVLIETSGNT
SEQ ID NO:65 VYLNNVSKGSVANIAAKLESMEPCCSVKDRIGYSMIDDAEQKGVITPGKTTLVEPTSGNT
SEQ ID NO:62 VYLNNVKGSVANVAAKLEIMEPCCSVKDRIGYSMINDAEQKGLITPGKSVLVEATSGNT
SEQ ID NO:64 VYLNNVKGSVANVAAKLEIMEPCCSVKDRIGYSMISDAEEKGLITPGKSVLVEPTSGNT
SEQ ID NO:31 VYLNKLADGCVARVAAKLELMEPCSSVKDRIGYSMIADAEEKGLITPGKSVLIEPTSGNT
121
180
```

## Figure 5B

SEQ ID NO: 66	GIGLAFIAASRGYKLILTMPASMSLERRVILKAFGAELVLTDPAKGMKGAVSKAEELNN
SEQ ID NO: 32	GIGLAFIAAAGYRLIICMPASMSLERRTILRAFGAELVLTDPARGMKGAVQKAEI KAK
SEQ ID NO: 65	GIGLAFIAAARGYKILTMPASMSMERRVILKAFGAELVLTDPAKGMKGAVEKAEELKK
SEQ ID NO: 62	GIGLAFIAASKGYKLILTMPSSMSMERRVLLRAFGAELVLTDAAKGMKGALDKATEILNK
SEQ ID NO: 64	GIGLAFIAASRGYKLILTMPASMSMERRVLLKAFGAELVLTDAAKGMKGAVDKATEILNK
SEQ ID NO: 31	GIGLAFMAAARGYKLIIITMPASMSLERRIILLAFGAELVLTDPAKGMKGAVOKAEELAK

181

SEQ	ID NO:66	** * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
TPDAYILQQFDNPANPKIHYETTGPEIWEDTKGKIDILVAGIGTGGTITGTGRFLKEQNP							
SEQ	ID NO:32	** * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
TPNSYILQQFENPANPKIHYETTGPEIWRSGGKIDALVSGIGTGGTVTGAGKYLKEQNP							
SEQ	ID NO:65	** * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
TPDSYMLQQFDNPANPKIHYETTGPEIWEDTKGKVDIFWAGIGTGGTISGVGYLKERNP							
SEQ	ID NO:62	** * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
TPNSYMLQQFDNPANPQVHYETTGPEIWEDSKGKVDIFIGGIGTGGTISGAGRFLKEKNP							
SEQ	ID NO:64	** * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
TPDAYMLQQFDNPANPKVHYETTGPEIWEDSKGKVDVFIGGIGTGGTISGAGRFLKEKNP							
SEQ	ID NO:31	** * * * *	* * * * *	* * * * *	* * * * *	* * * * *	* * * * *
TPNAYILQQFENPANPKVHYETTGPEIWKSDGKIDAFVSGIGTGGTTTGAGKYLKEONP							

241

SEQ	ID	NO: 66	NIKIIGVEPTESNVL	SGGKPGPHKI	QIGIGAGFI	PGNLDQD	VMDEVIE	ISSDEAVETARTL
SEQ	ID	NO: 32	NIKLYGVEPVESAIL	SGGKPGPHKI	QIGIGAGFI	PGVLDVNL	LDDEVIQVSSEESIETAKLL	
SEQ	ID	NO: 65	GVQVIGIEPTESNIL	SGGKPGPHKI	QGLGAGFVPSN	LDLGVMDDEVIE	VSSEEAIVEMAKQL	
SEQ	ID	NO: 62	GIKVIGIEPSESNIL	SGGKPGPHKI	QIGIGAGFVPRN	LDSDILDEVIE	ISSDEAVETAKQI	
SEQ	ID	NO: 64	GIKVIGIEPSESNIL	SGGKPGPHKI	QIGIGAGFVPRN	LDSEVLDEVIE	ISSDEAVETAKQL	
SEQ	ID	NO: 31	NIKLIGVEPVESPV	LSGGKPGPHKI	QIGIGAGFI	PGVLEVNLL	DEVVQISSDEZETAKLL	

301

Figure 5C

```
SEQ ID NO:66  *  ***  *****  **  *****  *  *  *  *  *  *  *
ALQEGLLVGISSGAAALAAIQVGKRPENAGKLIQVVFPSYGERYLSSILFQSIREECEKM
SEQ ID NO:32  ALKEGLLVGISSGAAAAAARIAKRPENAGKLIQVVFPSFGERYLSTVLFESVKRETENM
SEQ ID NO:65  AMKEGLLVGISSGAAAAAAVRIGKRPENAGKLIQVVFPSFGERYLSSILFQSIREECENM
SEQ ID NO:62  AVQEGLLVGISSGAAAAAAIKVAKRPENAGKLIQVVFPSFGERYLSSVLYQSIREECENM
SEQ ID NO:64  ALQEGLLVGISSGAAAAAAIKVAKRPENAGKLIQVVFPSFGERYLSSILFQSIREECEKL
SEQ ID NO:31  ALKEGLFVGISSGAAAAAAAFQIAKRPENAGKLIQVVFPSFGERYLSSVLFESVRREAESM
361 420
```

```
SEQ ID NO:66  *  KPFL
SEQ ID NO:32  VFEP
SEQ ID NO:65  KPE-
SEQ ID NO:62  QPEP
SEQ ID NO:64  QPEP
SEQ ID NO:31  TFEP
421 424
```



Figure 6A

SEQ ID NO: 41	MTSSLSLHSS-----FVPSFADLSDRGLISKNSPTSVISKVPTWEKKQISNR-N	*
SEQ ID NO: 34	-----	
SEQ ID NO: 68	M-----AVAVPNAPGRLLFLLQSTPPFN-PSSSASAARAQSF-RVPP-LRLSLFRRMA	
SEQ ID NO: 36	-----	
SEQ ID NO: 70	MSAAAAAIIPTSLGRLFHLRPTPN--PSRNLSGSSAQPLLRLSYHPRLTSLSRME	
SEQ ID NO: 38	MFSSAISQKPFLLQSLVIDR-YAQSTTAATRWECGLGNKSENFSTKRVL-----RAE	
SEQ ID NO: 40	-----	
SEQ ID NO: 72	M-----AAA--AATRLFLLHSSPPSSLPSPNPSPSSAHTP-RPAY-PRLALAHRMA	

60

SEQ ID NO: 41	SFKLNCVMEKSVDGQTHSTVNNTT-DSLNTMNIKE-----EASVSTLLVNLNDNKFDPPFD	*	*	*	**
SEQ ID NO: 34	-----				
SEQ ID NO: 68	GRSLTVIAGASGGERDLSASAVSVEALDSVSDSD-LETKEPSVSTMLTSFENSFDKYG				
SEQ ID NO: 36	-----				
SEQ ID NO: 70	AP--AAIADSHGGG--DLSASAVGAELGAVAAPDFDVENKEPSVATILTSFENSFDGFG				
SEQ ID NO: 38	GFKLNCLE----NREMEVESSSSLVDDAAMSLSEEDLGEPSISTMVMNFEKFDPPFG				
SEQ ID NO: 40	-----HESVATILTSFENSFDKYG				
SEQ ID NO: 72	AAP-AAIAGPSGDSERDLSASAVSLEALGAVESSGDGLERKEPSVATILTSFENSFDKYG				

61

120

Figure 6B

```

***** * ***** * * * * * * * * * *
SEQ ID NO: 41  AMSTPLYQTATFKQPSAIEINGPYDYTRSGNPTRDALLESLLAKLDKADRAFCFTSGMAALS
SEQ ID NO: 34  -----
SEQ ID NO: 68  ALSTPLYQTATFKQPSATDYGTYDYTRSGNPTRDVLQSLMAKLEKADQAFCTSGMAALA
SEQ ID NO: 36  -----LMAKLEKADQAFCTSGMAALA
SEQ ID NO: 70  SMSTPLYQTATFKQPSATDNGPYDYTRSGNPTRDVLQSLMAKLEKADQAFCTSGMAALA
SEQ ID NO: 38  AISTPLYQTATFKQPSAIEINGPYDYTRSGNPTRDALLESLLAKLDKADRALCFTSGMAALS
SEQ ID NO: 40  ALSTPLYQTATFKQPSATVNGAYDYTRSGNPTRDVLQSLMAKLEKADQAFCTSGMASLA
SEQ ID NO: 72  ALSTPLYQTATFKQPSATVNGAYDYTRSGNPTRDVLQSLMAKLEKADQAFCTSGMASLA
180

***** * ***** * * * * * * * * * *
SEQ ID NO: 41  AVTHLLKNGEEIVAGDDVYGGSDRLLSQVPRSGVVVKRVNTTKLDEVAAAI GPQTKLVW
SEQ ID NO: 34  -----
SEQ ID NO: 68  AVKHLQAGQEI VAGED IYGGSDRLLSQVPRNGI VVKRVD TTKISDVVSAIGPSTRLVW
SEQ ID NO: 36  AVTHLLKSGQEI VAGED IYGGSDRLLSQVAPRHGI VVKRID TTKISEVTS AIG-----
SEQ ID NO: 70  AVTHLLKSGQEI VAGED IYGGSDRLLSQVAPRHGI VVKRID TTKISEVTS AIGPLTKLVW
SEQ ID NO: 38  AVVRLVGTGEEI VTGDDVYGGSDRLLSQVPRGTGI VVKRVNTCDLDEVAAA IGLRTKLVW
SEQ ID NO: 40  AVTHLLQAGQEI VAGED IYGGSDRLLSQVPRNGI VVKRVD TTKINDV TAAIGPLTRLVW
SEQ ID NO: 72  AVTHLLQAGQEI VAGED IYGGSDRLLSQVPRNGI VVKRVD TTKINDV TAAIGPLTRLVW
240
181

```

**Figure 6C**

SEQ	ID NO: 41	***** ** ** * ** ***** ** **** * ***** ** *	LESPTNPRQIQISDIRKISEMAHAQQALVLDNSIMSPVLSRPLELGADIVMHSATKFIAIAG
SEQ	ID NO: 34	-----	- - - - - IAHSHGALVLDNSIMSPVLSRPIELGADIVMHSATKFIAIAG
SEQ	ID NO: 68	-----	LESPTNPRQIIDIKTISEIAHSHGALVLDNSIMSPVLSRPIELGADIVMHSATKFIAIAG
SEQ	ID NO: 36	-----	- - - - -
SEQ	ID NO: 70	-----	LESPTNPRLQITDIKKIAEIAHYHGALVLDNSIMSPVLSRPLELGADIVMHSATKFIAIAG
SEQ	ID NO: 38	-----	LESPTNPRLQISDIRKISEMAHSHGALVLDNSIMSPVLSQPLELGADIVMHSATKFIAIAG
SEQ	ID NO: 40	-----	LESPTNPRQIIDIKKISEIAHSHGALVLDNSIMSPVLSWPIELGADIVMHSATKFIAIAG
SEQ	ID NO: 72	-----	LESPTNPRQIIDIKKISEIAHSHGALVLDNSIMSPVLSWPIELGADIVMHSATKFIAIAG
		241	300
SEQ	ID NO: 41	*** ** * ***** * ** * ** ***** ***** ** * ** *	HSDVMAGVLAVKGEK-LAKEVYFLQNSEGSLAPFDCWLCLRGIKTMALRIEKQQENARK
SEQ	ID NO: 34	-----	HSDLMAGILAVKGES-LAKEVGFLQNAEGSGLAPFDCWLCLRGIKTMALRVEKQQANAQK
SEQ	ID NO: 68	-----	HSDLMAGILAVKGES-LAKEVGFLQNAEGSGLAPFDCWLCLRGIKTMALRVEKQQANAQK
SEQ	ID NO: 36	-----	- - - - -
SEQ	ID NO: 70	-----	HSDLMAGILAVKGESSLAKEIAFLQNAEGSGLAPFDCWLCLRGIKTMALRVEKQQANAQK
SEQ	ID NO: 38	-----	HSDIMAGVLAVKGEK-LGKEMYFLQNAEGSGLAPFDCWLCLRGIKTMALRIEKQQDNAQK
SEQ	ID NO: 40	-----	HSDLMAGILAVKGES-LAKEIAFLQNAEGSGLAPFDCWLCLRGIKTMALRVEKQQDNAQK
SEQ	ID NO: 72	-----	HSDLMAGILAVKGES-LAKEIAFLQNAEGSGLAPFDCWLCLRGIKTMALRVEKQQDNAQK
		301	360

20/20

Figure 6D

```
*** * ***** * ***** * ***** * ***** * ***** * ***** *
SEQ ID NO: 41 I AMYLSSHPRVKVYAGLPDHPGHHLFHQAKGAGSVFSTGVALSKHLVETTKYFS
SEQ ID NO: 34 I AEFLASHPRVKQVNYAGLPDHPGRALHYSQAKGAGSVLSFLTGSLALSCHKHVETTKYFS
SEQ ID NO: 68 I AEFLASHPRVKQVNYAGLPDHPGRALHYSQAKGAGSVLSFLTGSLALSCHKHVETTKYFS
SEQ ID NO: 36 -----
SEQ ID NO: 70 I AEFLASHPRVKVNYAGLPDHPGRSLHYSQAKGAGSVLSFLTGSLALSCHKHVETTKYFN
SEQ ID NO: 38 I AEFLASHPRVKQVNYAGLPDHPGRDLHYSQAKGAGSVLSFLTGSLALSCHKHVETTKYFS
SEQ ID NO: 40 I AEFLASHPRVKQVNYAGLPDHPGRSLHYSQAKGAGSVLSFQTGSLALSCHKHVETTKYFN
SEQ ID NO: 72 I AEFLASHPRVKQVNYAGLPDHPGRSLHYSQAKGAGSVLSFQTGSLALSCHKHVETTKYFN
361 420
```

```
***** * ***** * ***** * ***** * ***** * ***** *
SEQ ID NO: 41 I AVSFGSVKSLISMPCFMASHASIPAEVREARGLTEDLVRSAGIEDVDDLIADLAFKTFPL
SEQ ID NO: 34 I TVSFGSVKSLISLPCFMASHASIPASVREERGLTDDLVRISVGIEDVEDLIADLRALRTGPV
SEQ ID NO: 68 I TVSFGSVKSLISLPCFMASHASIPASVREERGLTDDLVRISVGIEDVEDLIADLRALRTGPV
SEQ ID NO: 36 -----
SEQ ID NO: 70 I TVSFGSVKSLISLPCFMASHASIPASVREERGLTDDLVRISVGIEDADDLIADLHRLSGPA
SEQ ID NO: 38 I TVSFGSVKSLISMPCFMASHASIPAAVREARGLTEDLVRSVGIEDVNDLIADLGNALRTGPL
SEQ ID NO: 40 I TVSFGSVKSLISLPCFMASHASIPSSVREERGLTDDLVRISVGIEDVDDLIADLYALRSGPA
SEQ ID NO: 72 I TVSFGSVKSLISLPCFMASHASIPSSVREERGLTDDLVRISVGIEDVDDLIADLYALRSGPA
421 483
```